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SPECIAL REPORT: 1992 Brings IS Urgency to Europe

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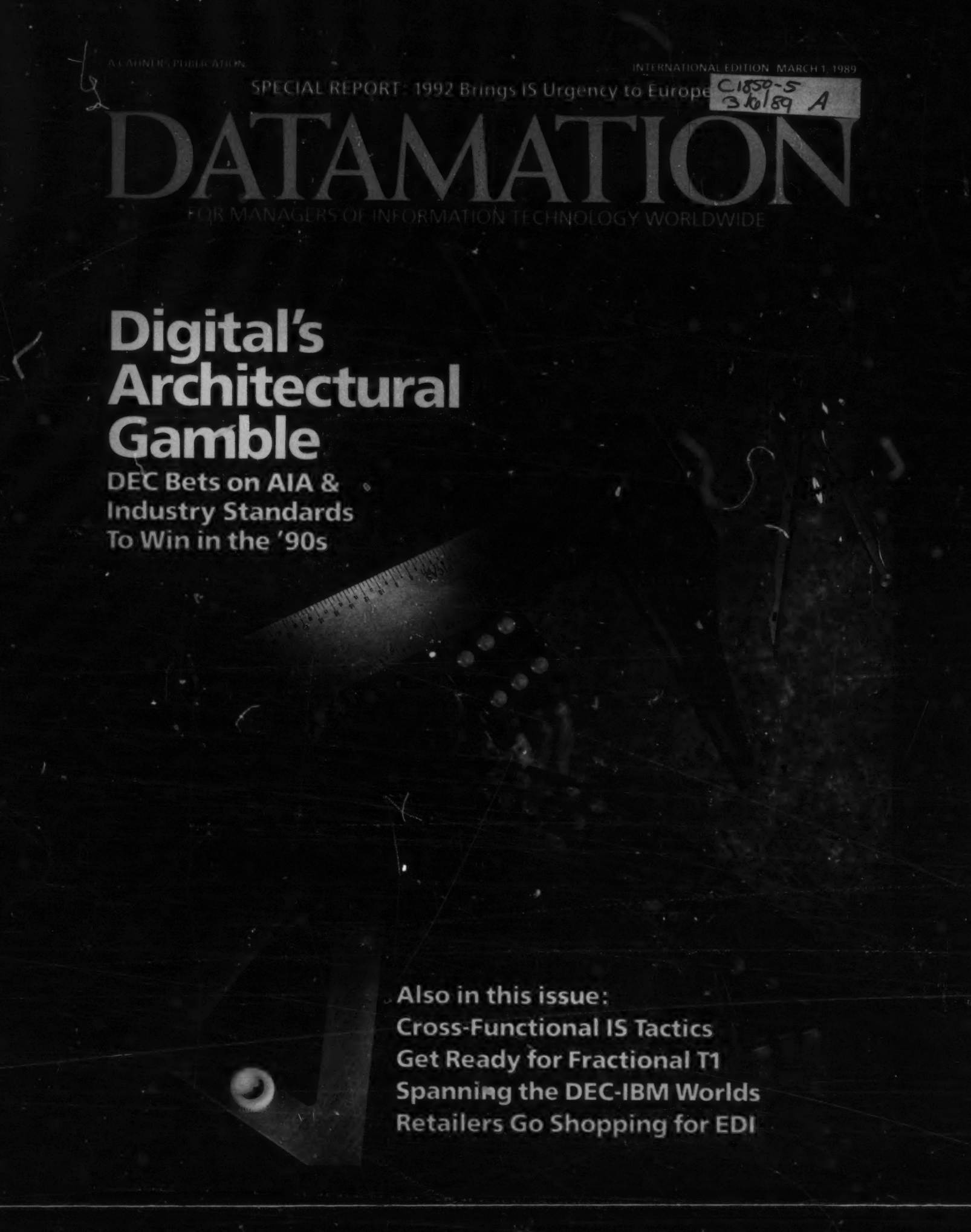
DATAMATION

FOR MANAGERS OF INFORMATION TECHNOLOGY WORLDWIDE

Digital's Architectural Gamble

DEC Bets on AIA & Industry Standards To Win in the '90s



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Cross-Functional IS Tactics

Get Ready for Fractional T1

Spanning the DEC-IBM Worlds

Retailers Go Shopping for EDI

MAR 1, 1989

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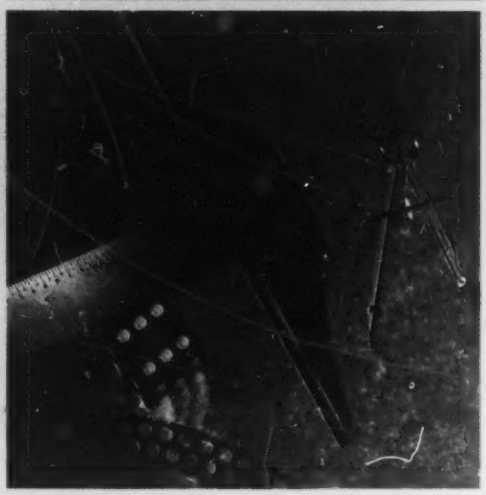

Digital's Architectural Gamble 14

BY GARY McWILLIAMS Nearly six years ago, Digital Equipment Corp. boldly bet its future on VAX/VMS, the ace in its technological deck of cards. One architecture for all time, for all purposes. But even as VAX/VMS enjoys architectural primacy, DEC is preparing a new, even bolder gamble. This time the wager is on an umbrella architecture that, while enveloping VAX/VMS, consists of a set of high-level interfaces independent of the operating system and hardware. Response to these interfaces, collectively called Application Integration Architecture (AIA), could determine DEC's future.

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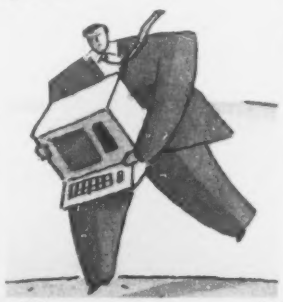
Cover Photography by Craig Cutler



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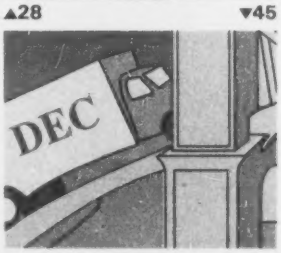

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BY GARY McWILLIAMS and TIM MEAD In an exclusive interview, Digital's founder and president Ken Olsen says Application Integration Architecture strategy is a natural evolution because DEC has always been a leader in standards. According to Olsen, Digital's support of two operating systems represents just a small shift in the company's 32-year history, although in the same breath he calls it a major change.

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With Europe's Market Unity Comes IS Urgency 28

BY PAUL TATE The creation of a single European market means opportunity for IS-savvy enterprises that can harness networks and open systems to their utmost advantage. The new, pan-European market will have 300 million affluent people and a gross domestic product of $4.4 trillion.

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BY DAVID STAMPS Almost everyone has stepped up efforts to connect the DEC and IBM domains, including the giants themselves. Some of IBM's customers report that IBM is talking quietly about a direct gateway to DECnet in the not-too-distant future. But the connectivity job is far from finished, and third parties and users will have to do much of the work.

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BY LEILA DAVIS As the cost barriers fall, retailers look more closely than ever at Electronic Data Interchange (EDI) services, which promise to be the biggest thing to hit retail since the Cabbage Patch Doll. There will be bargains for retailers' suppliers and customers, too. The first to buy in will realize the greatest savings.

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BY SUSAN KERR A new wave of fractional T1 service offerings will emerge this year for smaller firms seeking T1's speeds, and network users will be able to sign on for a service with a multiple of from one to 24 times 64Kb. Pricing for these services may ultimately determine their success.

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Navigating Cross-Functional IS Waters 73

BY JEFF MOAD In order to link design, manufacturing, distribution, and service, companies are reorganizing their information systems along cross-functional lines. Companies hope to be more responsive, get products to market quicker, and spot potential problems earlier.

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INSIDE DATAMATION

The Start of Something Big in IS

Covering a major story challenges the best of journalists. Equally challenged are the consumers of the information—you the reader. You're asked to make sense of what's provided to you. And you're often required to act upon that precious knowledge—today in some cases, tomorrow in others. That's where we find ourselves with this issue on two very different subjects—Digital Equipment Corp. and 1992.

In DEC's case, Boston Bureau Manager Gary McWilliams has spent the year since he last did a major report on the company watching the world's number two computer maker become a force in the fast-paced world of IS standards.

The key, he discovers, is understanding DEC's newly emerging Application Integration Architecture, the subject of our cover story, "DEC's Architectural Gamble," p. 14. AIA, as it's known, is far more ambitious than the company's first, eminently successful attempt at a single architecture, VAX/VMS, and has significantly greater meaning for major systems users. Although DEC executives won't say it, AIA represents Maynard's answer to Armonk: it's AIA vs. SAA, IBM's Systems Application Architecture.

Photograph by John Thompson

DIGITAL'S KEN OLSEN talks to (left) Boston Bureau Manager Gary McWilliams and (right) Editor-in-Chief Tim Mead.

McWilliams writes, "For DEC users, both old and new, the payoff of the AIA initiative could be freedom from VMS .... The potential risk, however, is that AIA means change, perhaps in how applications are handled and certainly in a new round of interfaces to deal with, and the introduction of a still unknown IS cost factor."

In measuring the risk that users who wager their companies' IS futures on AIA might take, McWilliams talked to more than 20 sources—users, competitors, consultants, and DEC executives. Most insightful, perhaps, are the comments of the architect himself, DEC founder and president Kenneth Olsen, whom DATAMATION interviewed just one day after his most important open systems product announcement to date.

1992 Is Here Today

Charting the technical directions of a $12 billion standard-setter is no small feat. But it's less daunting than figuring out what 12 nations are going to do in four years when they bond together with IS glue to form one of the world's largest trading blocs.

International editor Paul Tate with the assistance of Lauren Murphy and DATAMATION's foreign correspondents takes on 1992, a year that's become synonymous with European unity. Tate, who in the past has had no trouble confronting thorny issues—taking on Russia, China, and information-age vulnerability for DATAMATION in recent years—expresses uncharacteristic uneasiness with his findings. "Most companies are just entering the IS planning stage, but are doing so with a worrying mix of confusion and anxiety. There's no clear vision of what the changes will bring."

Perhaps the best way to begin preparing for the major economic event of the next decade is to read "With Europe's Market Unity Comes IS Urgency," on p. 28. It's the beginning of a very important IS story.

Tim Mead

—Tim Mead, Editor-in-Chief

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With Europe's Market Unity Comes IS Urgency

The creation of a single European market means opportunity for IS-savvy enterprises that can harness networks and open systems to their utmost advantage.

BY PAUL TATE

These days, it seems, 300 million affluent people and a gross domestic product of $4.4 trillion are needed to make a world market. That's what the 12-nation European Commission (EC) in Brussels hopes to create by the deadline of midnight on Dec. 31, 1992.

Although the dawn of the new frontier-free single European market is four years away, one fact is becoming clearer with every passing business day—information systems will be critical to success in the new environment.

> The intention is to have all our major systems running in one center—probably in West Germany.
>
> PIERRE TORFS
> GENERAL MOTORS CONTINENTAL

"Information technology will become a key component in the drive for European market share," predicts Gordon Ross, director of the computers and communications division of the PA Consulting Group in London. "But the IS executive is faced with the difficult task of having to plan and prioritize in the face of uncertainty. This is not the usual uncertainty of the effects of rapid technological advances, but the uncertainty of a business environment within which the IS function is operating."

This is the dilemma facing many IS executives, not only those in Europe but also those working for U.S. and Pacific companies trading in the European market or with European partners. Martin Walters, manager of information technology planning for the U.K.'s National Westminster Bank is one executive who is now hard at work trying to meet the challenges of 1992: "I have to ensure that whatever the bank wants to achieve with its European strategy, we can support it. But I'm still not sure just what the implications of 1992 will be for our IS operations or what repositioning we will have to do. We have set up a 1992 strategy group but I don't expect to have a plan ready for around six months."

DATAMATION research in Europe, the U.S., and Japan shows that 1992 IS plans are going to have to take account of a vast range of IS issues. The following are the most significant consequences of a single European market for the global IS community:

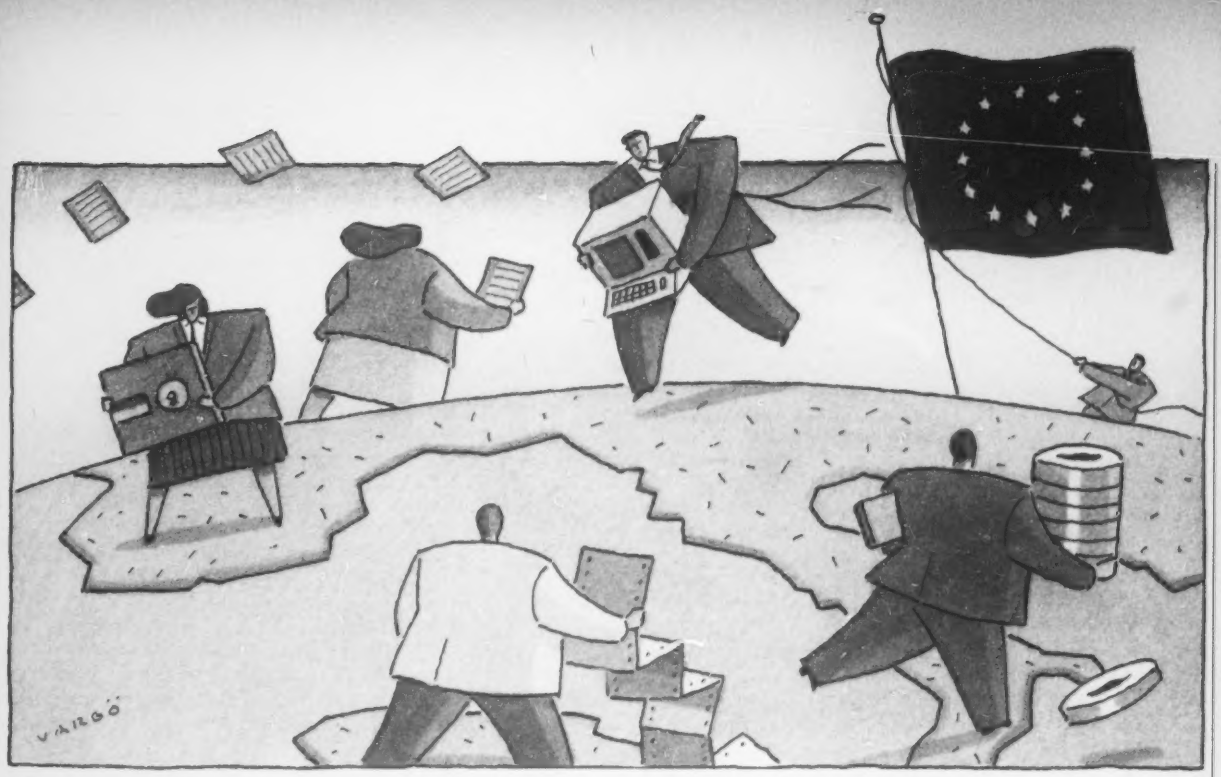
- European market expansion, liberalization, and perhaps protectionism;
- widespread reviews of corporate and government IS strategies in Europe;
- changes to existing systems and cancellation of inappropriate development projects;
- planning and purchasing confusion;
- fewer European IS suppliers, and lower prices for IS goods;
- cheaper and more coordinated European networking and network services;
- high demand for electronic data interchange (EDI), multilingual software, development tools, expert systems, executive information systems, and distributed databases;
- boost for open systems;
- the rise of the European network and data center;
- the ascendance of the European IS director.

Many of these IS trends are already under way, but the 1992 deadline will send them into overdrive.

Corporate Giants Accelerate IS Push

Many of the world's largest organizations are already taking the single market changes seriously (see "Chase Builds European Power Center" and "Honda Welcomes Eurostandards"). West Germany's Siemens is acquiring companies in other European countries even as it painfully restructures; Japan's Honda is expanding its operations across Europe; and dozens of international companies in nearly every industrial sector are taking on debt to fund aggressive acquisition strategies.

For its part, the U.S.'s largest manufacturer is investing heavily in communications technology to



gear up for 1992. General Motors is setting up one of Europe's largest EDI networks linking 2,000 computers as a way of streamlining its trading links in preparation for the single market. "The single European market is going to have a major impact. We just have to be ready for 1992 with our customer and supplier systems," says Pierre Torfs, manager of MIS coordination for GM Continental in Antwerp, Belgium. "That's why we are investing in EDI. On the customer side, the new network will help cut out administrative overheads and harmonize transactions. On the supply side, we have major assembly plants in West Germany, the U.K., Spain, and Belgium and we buy material from all over Europe. EDI will help reduce lead times and enable just-in-time concepts to be fully used."

The formation of a single market will bring about other changes at GM as well. "There will be no more duplication of systems in our various data centers," he says. "The intention is to have all our major systems, such as material controls, running in one center—probably in West Germany where the Opel factories are."

Will Trade Really Be Free?

What lies behind all this activity is the most fundamental change to the trading structure of the European continent since the signing of the Treaty of Rome that created the European Community 32 years ago. The Single European Market will create a frontier-free trading bloc that covers Denmark, the Netherlands, Luxembourg, Belgium, the U.K., Ireland, West Germany, France, Italy, Spain, Portugal, and Greece.

By 1993 the EC hopes that many of the trading barriers between the 12 countries will be removed and the unified result will be better prepared to compete on a world scale—industrially, economically, and technologically. Removing the barriers, estimates EC consultant Paulo Cecchini, will save European companies $200 billion. Of course, there's still a long way to go. As Kalle Isokallio, president of Nokia Data in Stockholm puts it, "There will be a common market when the French drink as much beer as they do wine. Until then there'll be a French market, a Spanish market, a Dutch market. . . ."

Certainly intense disagreements on issues such as the loss of sovereignty, fears of cultural homogeny, blanket taxation, the proposed European monetary system, and the extent of border controls are helping to keep European political oratory alive.

What's more, there are growing fears in the U.S., the Far East, and among the non-EC European countries such as Sweden and Austria about the possible emergence of a 12-nation Fortress Europe that is surrounded by prohibitive trade barriers and import quotas.

Get Ready To Learn and Reassess

The road from fragmentation to unity in Europe looks as if it is going to get harder to travel in the next few years. But whatever the eventual outcome and however long it takes, the process to create a single market in Europe is already irreversible.

The effect on the world's IS community will be twofold. Regulations governing telecommunications, technology procurement, and IS standards in Europe will change significantly. Top IS execs in the U.S. and Far East with authority over their European IS operations will be on a continual IS learning curve for the next four years. And changes in the rules governing industry sectors will force companies to reassess their European operations and marketing, and thus their IS systems and strategies.

The formal proposals are the easiest to detail. Procurement orders over $100,000 from governments or public bodies must now adhere to European standards—commonly OSI networking and the X/Open common applications environment in the IS sector.

EEC MEMBERS

West Germany
United Kingdom
France
Italy
Spain
The Netherlands
Belgium
Denmark
Luxembourg
Ireland
Portugal
Greece

Illustration by Kurt Vargo

Telecommunications services and the supply of telecommunications equipment will be liberalized. National networks and services will be made more compatible between countries. Joint R&D schemes and development projects supporting the European on-line database industry are already being actively financed and promoted. New copyright law is being debated to cover software and databases.

IS Execs' Three Biggest Hurdles

These changes pale into insignificance, however, compared with the challenges now facing IS managers within their own organizations. Three main tasks face IS execs responsible for European operations. They are:

- to change existing systems to make them effective in the transition period and compliant with new laws;
- to conduct rigorous and frequent reviews of their IS strategies to ensure that they will support overall organizational goals as they adapt to a single market;
- to embark on new development projects that can exploit the new trading environment.

The specific changes will differ from country to country, industry to industry, company to company. Someone in the IS division needs to be given the responsibility for working out which legislation—from the rules on trading documentation to those setting taxation—will affect the company's business and therefore its IS systems. Accounting systems and distribution systems are likely to be the most affected.

Strategic reviews will be even more difficult. The prospect of a single market has already led to an acquisition and merger boom in Europe as companies search for the critical mass and geographic reach to help them survive in the new environment. So IS managers must prepare to put more emphasis on systems that support internetworking, standards, and open systems if they want to impose some order on the ensuing chaos of incompatibility.

For companies with limited export experience, and for those hoping to integrate various national systems, there will be the complications of multiple languages, currencies and exchange rates, variable address formats, and different cultural and business

New Regs for a New Europe

The 285 reforms proposed by the European Commission in Brussels cover wide areas of industry and life in Europe. Approximately 250 have been tabled at the Council of Ministers and about 100 have been adopted so far. Among the proposals are measures that will, if adopted, change many customary ways of doing things:

- eliminate technical barriers to trade such as differing standards and regulations in the 12 member countries;
- abolish restrictions on transfer of capital;
- harmonize trading rules for auto, pharmaceuticals, food, construction, and media and information technology industries;
- liberalize financial services—there will be single banking license, more open securities trading, common insurance market;
- liberalize telecommunications, transport, and utilities industries;
- liberalize public procurement policies of member states;
- allow free movement of professionals between member countries;
- eliminate border controls—goods will have a single transit document; and
- harmonize tax and some social laws.

Honda Welcomes Eurostandards

Selling cars in Europe is a tough business for the Japanese. Differences in national requirements, import quotas, and consumer preferences mean that auto companies have to gear their operations closely to national markets.

Though the British won't start driving on the right after 1992, many other differences will disappear.

"When the EC market integrates in 1992," says Honda spokesperson Laura Kriska in Tokyo, "Honda foresees specification regulations for automobiles, now unique to each country, becoming standardized. This represents merits for the manufacturer as well as for the customer. For example, when a customer moves from one country to another, specification adjustments will not be necessary."

That's going to make the work of Honda Europe's Parts Center in Ghent, Belgium, much easier. Ghent acts as the hub of the company's European communications center and coordinates all distribution and inventories of Honda parts. Equipped with IBM mainframes and an NEC communications processor linked into similar systems in the U.S. and Japan, the center uses both leased and dial-up lines to connect to dealers in Germany, France, Belgium, and the U.K. via the national videotex systems. Communications with other countries are switched through the Ghent center.

"I expect the single market to push the integration of systems and widen the spread of communications throughout Europe," says Honda Europe's dp manager Benny Gossens in Ghent.

Some of these plans are already under way. In the near future the Ghent Parts Center will also expand its operations to include distribution and inventory activities for vehicles. Honda's European communications network will therefore increase in strategic as well as operational importance in the post-1992 EC market. Network expansion plans call for dealer linkages to be established in the Netherlands through Honda Nederland, as well as in Switzerland, Sweden, Austria, Italy, and Finland.

But Gossens is cautious about predicting any further changes until the results of Honda's 1992 strategy group comes out with its recommendations. "There may have to be some organizational changes," he says. "The implications of these are not yet clear."

By Paul Tate (London) and Stuart Dambrot (Tokyo)

Top IS execs in the U.S. and Far East with authority over European IS will be on a continual learning curve for the next four years.

practices. That means searching out more flexible, multilingual software packages or getting better development tools to prepare new systems in-house.

The networking trend will strengthen. "The phenomenon of separate production and marketing will intensify after 1992 and call for better links between factories, distributors, and corporate headquarters," says Gianfranco Cappelli, president of the IS strategy committee for the Pirelli group in Milan.

Many IS suppliers also believe that the trading links that will support the new European economy will be based on communications. "Computer networks," predicts Frank Onians, vp of telecommunications for IBM Europe in Paris, "will be the information backbone of a barrier-free Europe. Computers and telecommunications provide the infrastructure through which businesses will be able to realize their full potential, spanning countries and linking them with suppliers, customers, and business partners."

Networks and Open Systems Are Key

This belief has led to a rash of networking announcements in recent months. Twenty-two European telecom authorities have even taken the unprecedented move of joining together to form a single company, Managed Data Network Services (MDNS), which will provide a one-stop shop for pan-European networking. The European subsidiary of industry researchers Input in London, meanwhile, predicts that the managed network services business in Europe will grow from $50 million to $220 million by the end of 1993, while the EDI sector will increase from $40 million to $260 million.

The combined need to cope with pan-European acquisition or expansionist strategies and the emphasis on networking will drive the demand for open systems in Europe, where the concept of OSI networking began in the '70s and the pioneering X/Open group was formed in the early '80s. The open systems movement has already won the backing of the European Commission, governments in Sweden, U.K., France, West Germany, and many commercial users. The DATAMATION survey reveals that almost all German users, over 70% of French users, and 30% of U.K. users expect standards to influence their choice of operating systems over the next four years.

Geoff Morris, chairman of the X/Open group, observes, "1992 is all about the creation of a wide-scale economy in Europe where information will be the life blood of successful organizations. The changing market structure means that businesses must have truly flexible systems and no single supplier will be able to provide everything they want. Open systems are going to be the answer especially for the new consumer-related systems in the finance and retailing sectors."

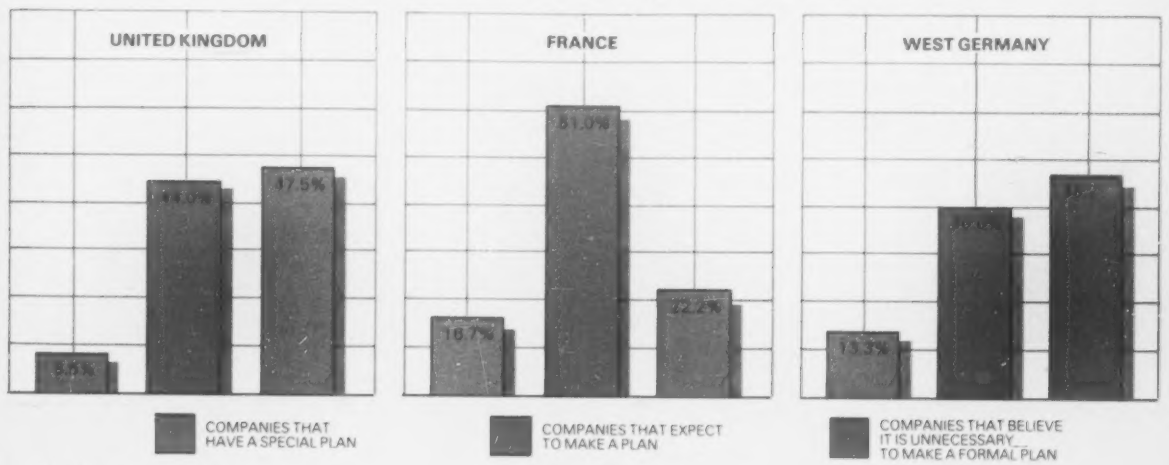
Open systems may help integration plans, but there will still be enormous pressure put onto IS departments in the run up to a single market. Since their budgets are unlikely to be substantially inflated, it means they must redeploy their resources, accept that they are going to have to work with their current systems (initially at least), and work fast to coordinate disparate IS operations before they become more of a liability than an asset to corporate progress.

What this amounts to is a widespread review of a corporation's IS strategy in the light of the single market developments. That doesn't mean current plans need to be disregarded, but they may well need to be adapted or augmented. Some projects may be canceled, and new ones put in their place.

Most of those new projects are likely to be concerned with developing competitive (aka mission critical) systems—from EDI links to marketing support applications. The competitive systems trend—which takes an innovative approach to new technologies such as expert systems, image processing, and porta-

French Users Plan Ahead

Among Europe's Big Three, the French are most aggressive in laying IS plans for 1992.



Source: DATAMATION/Price Waterhouse

Chart by Paragraphics

Centralizing IS management across Europe will likely be unavoidable.

ble equipment—is already formidable. What the prospect of heightened competition in Europe after 1992 will do, though, is to shorten the time scale for introducing these types of competitive-edge systems.

"One of the immediate impacts of 1992," says John Wishney, head of European Information Services at General Motor's subsidiary EDS, "is that companies are going to need access to a lot more information than they currently have so that they can search out new distribution channels, get credit information on their new customers and suppliers, and monitor markets."

Europe's Execs Want Better Information

Nearly 700 European IS managers see decision support, OA among their top application concerns in next five years.

Application	Plans*
Executive Decision Support	55%
Office Automation	55%
Replacing Outdated Systems	50%
Electronic Trading Links	34%
International Telecom Networks	33%

*Ranked by those with specific development plans.
Source: Amdahl Executive Institute

A recent survey by the Amdahl Institute in the U.K. supports this analysis. Interviews with 700 senior managers across Europe revealed that 55% would like to see better executive information systems (EIS) being developed in their corporations over the next few years (see "Europe's Execs Want Better Information"). In fact, EIS tops the application wish-list of Europe's senior executives.

Doubts about Decentralized IS

Development pressure on IS is likely to increase, making the use of advanced development tools and software engineering technologies more necessary. To coordinate those developments across the company, IS managers will have to take a cool look at the structure of the IS function in Europe. Skills shortages, the need for better IS project management, and cost-cutting measures may suggest that the heavy decentralization of IS across many countries—traditionally the best way to avoid cross-border complications in Europe—may not be the solution.

Chase Manhattan Bank is only one international company that has come to that conclusion. Similar moves are afoot at Mobil Oil's subsidiary Mobil Data Services, which is building a center in the U.K. with an IBM host and PS/2 workstations to support the corporation's European marketing, refining, exploration, production, shipment, and supply operations. And the company is now developing European decision support and office systems. Continental Insurance, meanwhile, is building a European data and network hub that will handle European processing and development and switch data and inquiries via satellite, home to the U.S.

Centralizing the European processing operation may be a drastic measure, but centralizing the IS management function across Europe is likely to become unavoidable. European IS forums, strategy committees and joint working groups already exist in many companies operating in Europe. Their importance is likely to increase enormously as Europe exchanges its multinational status for a single market. And this forum will need a leader who has a broad understanding of European markets and processes. The era of the European IS director, responsible for continent-wide operations, may be here. IBM certainly thinks so. As Pierre Hessler, vp of IBM Europe in Paris, puts it: "Emerging fast is the European customer who is preparing for the January 1, 1993, horizon. His preoccupation and demands are decidedly international."

Those IS managers will need courage too. The process of getting the IS operation from 1989 to 1993 is going to be a tricky one. The pitfalls of legislative uncertainty, the rethink of the IS strategy, the increasing pressure to produce systems that support corporate goals in the new environment, and the rush to impose some order on the ensuing chaos are certainly going to make IS execs' lives interesting. ▭

Chase Builds European Power Center

Divide and conquer used to be the watchwords for U.S. companies crossing the Atlantic to attack European markets. By setting up operations in each country, one by one, they could make sure that they came to grips with local laws, languages, and business practices. The prospect of a single European market and common regulatory procedures has changed such battle strategies.

"The regulatory changes make you look at your competition with a heightened sense of urgency," says Elaine Bond, senior vp of corporate systems at Chase Manhattan's New York headquarters. "The single European market has added a new motivation to our plans to consolidate our operations in Europe."

Chase is expanding a major European data center in Bournemouth on the south coast of England. According to sources at Chase's London office, as many as 20 IBM System 38 machines in Chase sites across Europe will be replaced by the new center. Two IBM AS/400s costing $2.5 million have been installed to help with the transfer of work. In countries where there is a heavy volume of local transactions, France and West Germany for example, the systems will remain in place but the rest will gradually be phased out.

"We also have big iron there—3090-class machines—and Digital systems," adds Bond. "The center is going to play an increasingly important role in the area's processing activities. We have visions of architecting and rationalizing our corporate IS resources. The Bournemouth center is going to be one of the regional power centers in that strategy. This is partly a result of repositioning as a corporation and partly to prepare for the European market."

The bank for the most part is still studying how to restructure its global IS operations. But the goal is to create a network of centers that will be more responsive to customer needs and market changes, and distribute existing and new banking products rapidly across major markets like Europe.

"You've got to do everything you can to be competitive these days," Bond says.

Europe's IS Execs Predict The Future

A special DATAMATION survey on the impact of 1992 reveals that European IS managers expect a boost for standards and greater corporate recognition of the importance of IS in the march toward a single market.

BY PAUL TATE

A common trading market in Europe may be the goal, but IS approaches to it are still mostly nationalistic in nature.

That's the conclusion of a special survey of 100 European users by DATAMATION and Big Eight accounting firm Price Waterhouse. Covering France, the United Kingdom, and West Germany, the survey found that French IS managers are ahead of their Continental counterparts in understanding the need to prepare for 1992. More than three-quarters of French users believe a 1992 IS plan is necessary; under half of German and British users think so.

Advertising and conviction explain the disparities. The French government's awareness campaign about the single market has been more successful than those in the other countries. Besides, many U.K. and German firms regard the single market as an extension of existing trends rather than as a new ball game.

Not many companies in the three countries have actually prepared a specific plan so far; France has the largest number of companies (17%) that have a plan, followed by 13% of West German companies and only 9% of U.K. firms. French users are certainly taking the changes very seriously. Almost 40% predict that preparing for 1992 will delay the development of their mission-critical systems.

1992: The Pulse Of Users

There is more consensus between the three markets on other issues, though. The overwhelming majority (90%) of European users feel that the emergence of a single market will reduce the number of hardware suppliers in Europe, thus reducing the complexity of choice.

Prices are also likely to fall due to the benefits of the economies of scale, the effects of a reduction in tariff barriers, and increased competition. While around 40% of French and German users expect a reduction in the number of software suppliers as well as hardware suppliers, in the U.K. that expectation is higher—with more than 60% predicting fewer vendors.

Reflecting the trend in West Germany to tailor systems, users are confident that there will still be many systems development contractors around in the New Europe. That doesn't mean the software package market is in trouble. As one respondent put it: "One of the main advantages will be to establish common European core applications through the sensible use of package solutions."

A New Era for Standards

In fact, the greater standardization of systems—both those from suppliers and those being used within user corporations—is likely to be one of the most significant consequences of the single market. One French user predicts that there will be "a standardization of information systems in all European countries for our internal users and agents. We

INTERNATIONAL

1992: THE PULSE OF USERS. A single market may be the goal, but IS approaches to it remain nationalistic. — **76-1**

1992: SETTING THE STRATEGY. It will take robust planning to seize the opportunities of a single market. — **76-5**

1992: TRADING NETWORKS. Network services and EDI will bind Europe into a single market. — **76-13**

1992: IMPACT ON FINANCE. Bankers see 1992 accelerating trends already under way. — **76-15**

1992: IMPACT ON MANUFACTURING. Italian firm Pirelli integrates systems in preparation for 1992. — **76-18**

1992: IMPACT ON GOVERNMENT. Governments are masterminding the single market, but will they be able to bring standardization down to the user level? — **76-19**

1992: THE OUTSIDERS' VIEW. Firms outside the EC have an added measure of uncertainty. — **76-25**

INNOVATIONS: Workstations, Unix, 1992. — **76-27**

The Acceleration of Standards

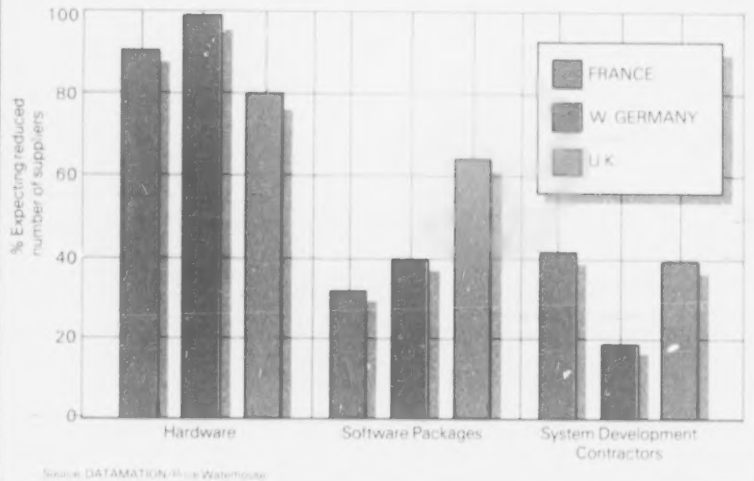
European users are most eager to embrace standards for operating systems as they revamp their IS strategies for 1992.

(by percent)	Operating Systems %	Packages %	Database Systems %	Software Dev. Tools %	Suppliers %
FRANCE	72	72	28	50	56
GERMANY	100	13	67	27	7
U.K.	29	32	19	20	24

Source DATAMATION/Price Waterhouse

Hardware Suppliers Face Shakeout

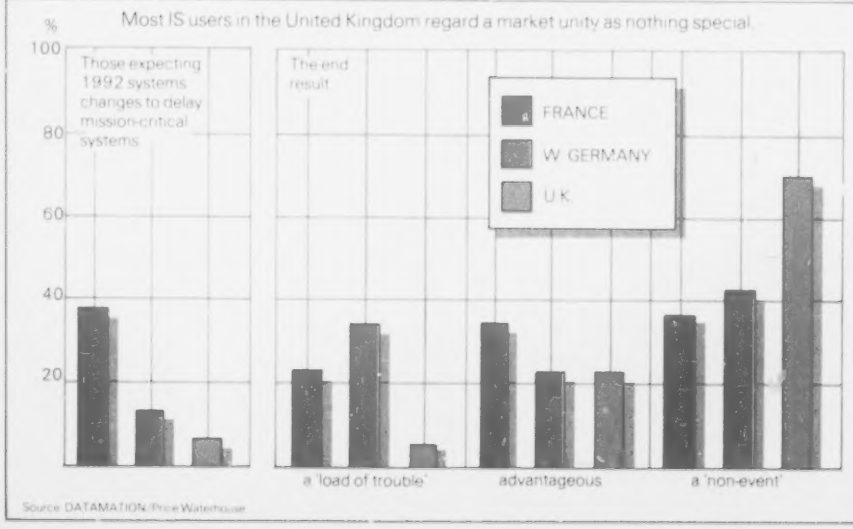
Most European users expect the number of systems suppliers to dwindle as 1992-inspired competition heats up.



Source DATAMATION/Price Waterhouse

British Regard 1992 Cautiously

Most IS users in the United Kingdom regard a market unity as nothing special.



Source DATAMATION/Price Waterhouse

Charts by Paragraphics

expect this to affect manufacturing, order processing, and distribution systems particularly."

Certainly users in all three countries expect European standards to influence their purchasing over the next four years. Operating systems purchases in particular will be affected. That's likely to have a shattering effect in West Germany, where all the respondents predicted standards would influence their OS buys. A high number of French users (79%) agreed, compared with only 29% in the U.K.

French companies also predict that their buying criteria for software packages and software development tools will be affected by 1992. West German firms say they intend to alter their database strategies, while British users expect less influence in most areas.

Networking Outward and Upward

Network expansion also seems to be an inevitable consequence of the move toward a united Europe. The single market, says one respondent, "will lead to more European links at the business level. IS will play an important part in providing the communications [infrastructure] for these links—electronic mail, electronic data interchange, etc. This will enhance the IS role in an organization."

That point was picked up by other users, too. The move toward a single market means that firms must prepare strategies to cope with the changes. Putting those strategies into practice presents "an opportunity for IS to become closer to the corporate strategy," says one British user.

Another British user takes the consequences of the process further, predicting that the single market will provide "an increased opportunity to push IS people higher up the company as it tries to deal with the business aspects of 1992."

Nevertheless, it will only be those IS executives who grasp the opportunities who are likely to benefit, and that's going to be tough for the British since a large proportion of U.K. users remain cynical about the impact of 1992. A strong majority simply regard it as a nonevent.

This attitude may change, though, as the pressures mount over the coming months. DATAMATION will be tracking the changes with its next 1992 survey, to be published this summer. ▭

Europe's Electronic Trading Bloc

Network services and electronic document interchange systems are predicted to be the trading links that will tie Europe's single market together. Now, the task is to make it work.

BY PETER PURTON

Jean Vinois, a member of the European Commission team in Brussels, declares of the implementation of its single market policy: "The single European market is all about the 12 member states working as one. Every procedure which improves business communications helps us attain the single European market. EDI will accelerate our attainment of the single European market."

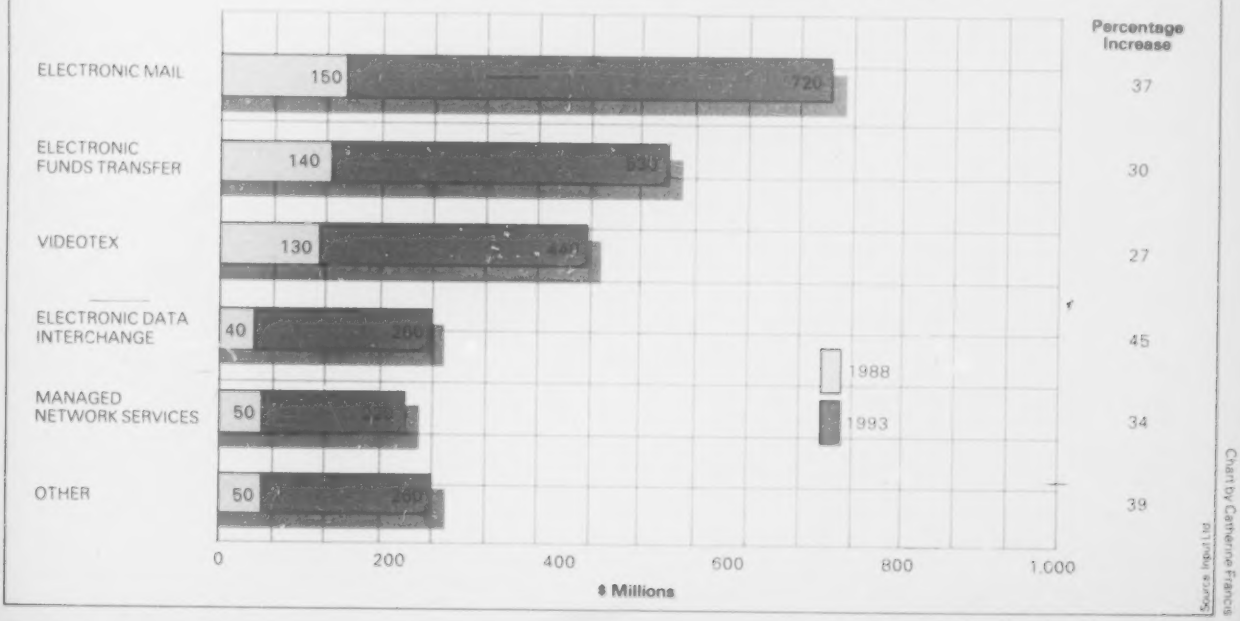
EDI is really a form of electronic mail, albeit with a highly structured format. Experience with current e-mail systems suggests that an electronic message can save as much as half the costs of preparing and distributing an internal memo or external letter. Clem Jones, managing director of British Telecom's electronic messaging subsidiary Dialcom U.K. in London, estimates the savings due to EDI may be as much as $27 per transaction cycle, which is comprised of order, acknowledgment, delivery note, and invoice.

"In addition, and of greater importance to most firms," says Jones, "the time taken for the order-to-invoice cycle can be cut from around 14 days to 3 days, and this can generate significant savings in stock and improvements in cash flow." By implementing EDI, New York-based management firm Coopers & Lybrand thinks that industry could reduce the total cost of the

1992: Trading Networks

Mail and Money To Move Swiftly

Use of electronic mail and funds transfer will soar in Europe, as countries evolve a single market.



average product by between 5% and 7%.

The arguments for EDI are compelling and its rate of adoption reflects this. Traffic on the U.K.'s networks alone is estimated to be growing at 20% a month. The European Commission's target of seeing a giant EDI mesh covering all of Europe by 1992 is looking more and more achievable. But there are problems.

The first of these is that of standards. Mark Selsby, European EDI program manager at Digital Equipment Corp., estimates that there may be as many as 41 different groups working on EDI message sets in Europe alone. "The needs of somebody trading in high-volume consumer goods are completely different from someone else, let's say, engaged in international trade," notes Selsby.

Another obstacle to EDI's progress may be lack of security. "I cannot see EDI gaining significantly in popularity until the security problem is solved," notes Etienne Dreyfous, consultant to the international airline telecommunications network operator SITA and a pioneer of international data networking. "Business messages are inherently confidential. What company wants to give its competitors intimate insight into its relationships with its suppliers or customers?

Dreyfous believes that illegal access to corporate computers may pose an even greater deterrent to potential EDI users. "In this age of almost daily press reports of hackers and computer viruses gaining illicit access to computer systems, companies are getting very cautious about linking their computers to external systems," says Dreyfous.

Lack of Coordination

The major obstacle to EDI, however, may in the end turn out to be the same problem that the single European market initiative is designed to overcome—the divisions between the 12 member countries. As in so many other issues, the various European countries have adopted their own approaches to EDI without coordinating their activities with their neighbors.

"Some, such as the U.K., actively promote EDI and allow ease of export and import of electronic data," notes Peter Copping, executive director of telecom and computer at London-based PA Consulting Group. "Others, such as the Federal Republic of Germany, have sustained protectionist measures aimed at prohibiting foreign suppliers from gaining a dominant position in domestic markets."

There are also differing EDI standards. In West Germany Teletex—the super telex proposed and largely developed by the Deutsche Bundespost—has been heavily promoted as the means for exchanging electronic business correspondence. In the U.K., the so-called GTDI (guidelines for trade data interchange) syntax specification promoted by the Board for the Simplification of Trading Procedures (SITPRO), has been widely adopted.

In the rest of Europe, being able to start with a more or less clean slate, has brought the benefit of being able to go straight to EDIFACT (electronic data interchange for administration, commerce, and transport), the standard that is designed to eventually replace all of the existing standards.

Ironically, the signs are that far from protecting the home industries as they were designed to do, these protectionist strategies may have backfired. With just 1,000 or so users of EDI on the whole mainland of Europe—compared with over 6,000 in the U.S.—the European EDI industry has been all but throttled at birth.

□ INDUSTRY COULD REDUCE THE TOTAL COST OF THE AVERAGE PRODUCT BY BETWEEN 5% AND 7%.

Even in the U.K., where government encouragement and a liberal environment has persuaded some 2,000 users to adopt EDI, the installed base of GTDI may make the U.K.'s EDI an island cut off in electronic trading terms from other European countries promoting EDIFACT.

The lack of agreement and coordination among these countries has opened the door to outsiders. The leading names in pan-European EDI in Europe are not European companies but U.S. companies such as General Electric Co. and Computer Sciences Corp.

As outsiders they have in fact enjoyed a number of advantages. For a start, by not being associated too strongly with any one European country they have managed to avoid getting entangled in the internal rivalry that is still a strong factor amongst the member states of the European Community. And by not being allowed to operate their own circuits, they have had to become experts at negotiating the obstacle course of cross-border telecommunications within Europe. Most important, their raison d'etre is to cater to their multinational clients—precisely those who are pioneering pan-European EDI.

A quick look at the major EDI projects in Europe today clearly shows the lead taken by the U.S. companies. General Electric supports what is probably Europe's most advanced EDI service—at least in terms of open standards—that of the Brussels-based European Council of Chemical Manufacturers' Federations. Relative newcomer to this field in Europe, Dallas-based Electronic Data Systems (EDS) is building a continentwide EDI network for its parent company General Motors, designed to link 2,000 computer systems in seven countries.

"Our estimates suggest that $200 dollars may be saved from the price of a car by using EDI," says John Wishney, head of development for EDS European Information Services, Reading, England. "Within 18 months we expect to have the majority of GM's regular suppliers dealing with [GM] electronically." Once the net is up and running, EDS hopes to sell capacity on it to other commercial users.

Europeans are beginning to hit back, however. Siemens AG, the West German electric and electronic giant, has set up Vascom, which will base EDI and other value-added network services on its own international network. That network boasts 400 nodes in 50 countries.

The PTTs, which probably hold the strongest card because they already have all of the customers and own the basic network infrastructure, are also gearing up to meet the EDI challenge. Last year, the Deutsche Bundespost and France Telecom announced the creation of their Eucom joint venture; EDI is expected to provide the core business. And last year, 22 of Europe's PTTs and network carriers, including the Deutsche Bundespost and France Telecom, agreed to form MDNS, a jointly owned venture with the aim of helping multinational companies and other international organizations meet their demands for cross-border network development.

So far in Europe there may be only a few thousand users, but any one of these users can have as many as 50,000 business contacts whom they are urging to also adopt EDI. Add this to the weight that the European Commission is putting behind EDI—in an effort to chip away at the estimated $300 billion spent annually on paper-based business communications—and it is clear that European EDI is on its way. □

Peter Pe[illegible] is the editor of the Telecom-europe Communications Newsletter. *He is based in Bath, England.*

Sector Performance Update: Food, Petroleum, Chemicals, and Pharmaceuticals

The message is mixed, but this won't necessarily be a boom year for companies in these industrial sectors.

BY MADELINE FRANCHI

In many cases, the food and beverage industry straddles categories: it's a processor on the one hand and a service sector on the other. On the process side, production rose about 3.5% in 1988 and will advance by just a little less this year. Compared with some other industries, this part of the food industry is less affected by the business cycle swings, since straitened consumers will spend an increased share of their income to cover their basic requirements.

The food service industry, however, is highly influenced by consumers' willingness to spend money on food away from home. It saw a surprising and steep downturn in activity during 1988. Retail sales at eating and drinking establishments grew about 6%, but that represented a real gain (adjusted for inflation) of only 1.7%. In real terms, we expect 1989 growth will just about equal that of 1988, but the trend will be up throughout most of the year, creating a notable difference in psychology for both the industry and the consumer. Expect sales at fast food places to outpace sales growth at full service restaurants.

The output of petroleum and coal products grew more slowly than expected late in 1988, ending the year with only a 2.2% increase. OPEC antics and forecasts of an economic downturn seem to have encouraged petroleum and coal processors to let inventories run low until they could form a better idea of the 1989 economic climate. Unless there are major surprises, U.S. petroleum production will inch downward 0.1% by the end of this year.

Thanks to favorable export markets and the restocking of some chemicals in short supply, the 1988 output of the chemicals industry grew 8.3% over 1987 levels. However, recent evidence suggests that chemical production will grow only very slightly this year because of reduced end-market activity, both foreign and domestic. Furthermore, higher prices will limit the amount of inventory manufacturers will carry as well as their willingness to enter into long-term supply contracts. In response to these forces, chemicals output will grow just 0.8% this year.

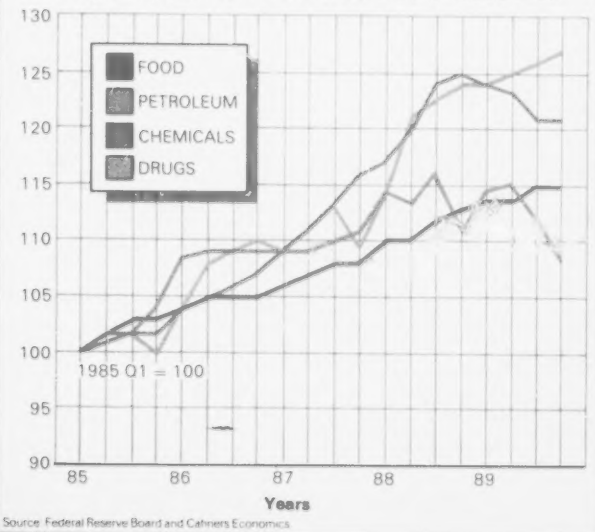
Within the chemicals industry, U.S. drug manufacturers in 1988 enjoyed their strongest year of output growth since 1976: production grew 9.7%, compared with an average increase of only 2.9% annually earlier in the decade. A significant part of this can be attributed to healthy gains in drug exports. After expanding 4.3% in 1987, exports of pharmaceutical preparations surged 26% in the first eight months of 1988 compared with the same period in 1987.

As a result of 1988's upturn in production, employment in the prescription drug industry made strong advances—the strongest, in fact, since 1977. Employment grew 6.6% to 181.5 thousand workers, 11.1 thousand more than in 1987.

With the dollar leveling off in 1989, the drug industry won't get the export boost that helped it last year. At the same time, U.S. consumers will not be able to pick up the slack as the economy enters its slowest growth phase since the 1982 recession. So production of drugs and medicines will rise a more moderate 3.5% in 1989.

Industrial Production Index

Drugs are up, petroleum is down, food and chemicals are flat.



Source: Federal Reserve Board and Cahners Economics

Sector Performance

A cooling economy may take the edge off results in these major industrial sectors during 1989.

	Estimated 1988	Projected 1989
Food and Beverage		
Production (1)	3.5%	3.2%
Full service restaurant sales (2)	$66.4	$70.3
Fast food sales (2)	$44.3	$45.3
Drinking place sales (2)	$9.7	$9.2
Petroleum		
Production (1)	2.2%	–0.1%
Avg. capacity utilization	84.8	84.0%
Plant/Equip. spending (3)	$19.4	$18.9
Chemicals		
Production (1)	8.3%	0.8%
Avg. capacity utilization	87.4%	85.3%
Plant/Equip. spending (3)	$19.7	$20.3
Pharmaceuticals		
Production (1)	9.7%	3.5%
Employment (4)	181.5	188.8

(1) Annual percentage change; (2) billions 1982 $; (3) billions $; (4) thousands of persons.

Source: DATAMATION/Price Waterhouse

Chart by Paragraphics